AF/2125

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicants:	Michael W. Hawman *et al.*	Docket No:	EH-10536-A
Serial No:	10/064,105	Examiner:	Ryan A. Jarrett
Filed:	June 11, 2002	Art Unit:	2125
Title:	METHOD AND APPARATUS FOR MANAGING MAINTENANCE OPERATIONS	Date:	24 May 2004

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF UNDER 37 CFR 1.192

Appellants submit this Appeal Brief, in triplicate, within two (2) months from the date of the Notice of Appeal. Appellants authorize the Commissioner to charge the $330 fee set forth in 37 CFR 1.17(c) for filing this Appeal Brief along with any other fees set forth in 37 CFR 1.16 or 17 which may be required by this Appeal Brief, and to credit any overpayments, to **Deposit Account Number 21-0279.** In order to facilitate processing of the fees, Appellants provide a duplicate copy of this page.

Respectfully submitted,

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I. REAL PARTY IN INTEREST

United Technologies Corporation, the assignee, is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

No other appeals or interferences are known to Appellants, Attorney for Appellants, or Assignee which will directly affect, be directly affected by, or have a bearing on the decision of the Board in this appeal.

III. STATUS OF CLAIMS

Claims 1-25, 27 and 34-38 are pending. Claims 26, 28-33 and 39 were cancelled. Claims 1-25, 27 and 34-38 stand rejected. Claims 1-25, 27 and 34-37 are under appeal. Appendix A provides a copy of the claims under appeal.

IV. STATUS OF AMENDMENTS

The Advisory Action dated 21 April 2004 indicated that the Amendment dated 09 February 2004 would be entered.

Appellants submit an Amendment canceling claim 38 on even date of this Appeal Brief but under separate cover. The Examiner has not yet acted upon the Amendment.

V. SUMMARY OF INVENTION

The invention relates to a computer system that assists with various tasks during a maintenance operation on a product, such as during an overhaul of a gas turbine engine. Specification, ¶ 54.[1] The computer system includes a teardown module, which a technician uses to populate an As-Received

Configuration database during disassembly of the engine to part level. *Id.* at ¶ 64. The graphical user interface (GUI) lists all possible part numbers for the part removed from the engine, identifying which part number is expected to be removed from the engine and which part number is planned for reinstallation in to the engine. *Id.* at ¶¶ 68 and 69. The technician selects the part number for the part removed from the engine. *Id.* at ¶ 70.

The teardown module creates an electronic record for the part, which has many benefits. *Id.* at ¶ 71. First, other areas of the maintenance facility can access and use the electronic record without requiring the physical presence of the part. *Id.* at ¶ 72. Second, this information populates an As-Received Database. *Id.* at ¶ 73. Comparison of the As-Received Database with the Expected Database can reveal "unexpected" part numbers that may require the modification of the workscope performed on the engine. *Id.* at ¶¶ 73 and 74. Third, the system can determine the immediate disposition of the part removed from the engine. *Id.* at ¶ 76. Finally, the system generates a tag for attaching to the part for routing through the facility. *Id.* at ¶ 78.

The computer system also includes an inspection module, which an inspector uses to disposition the parts removed from the engine. *Id.* at ¶ 97. The graphical user interface (GUI) lists all modifications identified for that part and all part numbers that can replace that part given the workscope. *Id.* at ¶¶ 99 and 100. With this information, the inspector can now disposition the part. *Id.* at ¶ 103. The inspector can identify parts as serviceable, remove from service, repair or hold. *Id.* at ¶¶ 105, 107, 110 and 115. Using these dispositions, the system creates work instructions and updates the tag. *Id.* at ¶ 106, 112 and 114. After dispositioning all of the parts, the system produces a Should Build database. *Id.* at ¶ 120.

[1] Since Appellants electronically filed the application (*i.e.* no page numbers), this Appeal Brief will cite to the Specification by paragraph number.

VI. ISSUE

The issue presented for review is whether the rejection of claims 1-25, 27 and 34-38 under 35 U.S.C. § 102(e) as being anticipated by United States Patent Number 6,516,239 to Madden *et al.* (hereinafter "Madden") was improper.

VII. GROUPING OF CLAIMS

The following claims stand or fall together:

1. Claims 1, 3-5 and 15;
2. Claims 6-11 and 16;
3. Claims 12, 13, 17 and 18;
4. Claims 14 and 20-22;
5. Claims 23-25 and 27.

The remaining claims, namely claims 2 and 34-37, do not stand or fall together.

VIII. ARGUMENT

A. The Rejection

The Examiner rejected claims 1-25, 27 and 34-38 as being anticipated by United States Patent Number 6,516,239 to Madden *et al.* ("Madden").

B. The Reference

Madden describes an assembly line control system. The control system moves the vehicles to various lanes within the assembly facility so that contiguous groups of vehicles with the same lot number enter final assembly as a batch.

C. Argument

The rejection of claims 1-25, 27 and 34-37 was improper. Specifically, Madden fails to disclose or to suggest all of the claimed features. A reference anticipates a claim only if the reference describes each and every element set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 2 USPQ2d 1051 (Fed. Cir. 1987).

1. Independent Claim 1 and Dependent Claims 2-5 and 15

Independent claim 1 recites, *inter alia*, "generating a tag ... having information thereon responsive to said part identifier information" and "wherein a user reviews said information on said tag and routes said part accordingly." Madden fails to disclose or to suggest either of these features.

Madden describes "the reading of a vehicle identifier, such as a SmartEye™ label, by a SmartEye™ reader," Madden, col. 9, ll. 34-40, where the vehicle identifier is "typically the Vehicle Identification Number (VIN)". Madden, col. 7, ll. 30 and 31. In other words, the information on the label described in Madden is part identifier information, not information **responsive to** part identifier information as required by the claim.

Further, Madden describes that the computer sends routing instructions to "switching (or intersection) points" on the conveyor system. Madden, col. 10, ll. 7-13. In other words, the system automatically routes the vehicle along the conveyor, and a user does not route the part based upon information on the tag as required by the claim.

In the Response to Arguments section of the 08 October 2003 Office Action, the Examiner stated that "Madden discloses that operators on the assembly line can alter build instructions and the positioning of parts 'on the fly', or in real time." This statement, however, has no bearing on the claim

language discussed above, namely the user reviewing the tag and routing the part accordingly. Madden does not describe that review of the tag by the user initiates the change in build instructions.

Accordingly, the rejection of independent claim 1 was improper. The rejection of claims 2-5 and 15, which depend from independent claim 1, was also improper. None of the cited references provide a motivation for such a modification.

In addition to the arguments made with respect to independent claim 1 above, dependent claim 2 also recites, *inter alia*, "generating a new tag." Madden also fails to disclose or to suggest this feature. Madden describes adjusting routing instructions, such as when the status of a FAILED vehicle changes to PASSED. Madden, col. 11, ll. 2-4. However, Madden fails to describe or to suggest the generation of a new tag. Recall that the label in Madden provides a vehicle identifier, which is "typically the Vehicle Identification Number (VIN)". Madden, col. 7, ll. 30 and 31. In fact, no need exists to change the tag since Madden does not indicate that the VIN changes. Therefore, the rejection of dependent claim 2 was improper.

2. Independent Claim 6 and Dependent Claims 7-11 and 16

Independent claim 6 recites, *inter alia*, "generating output from said computer" that "a user reviews ... and handles said part accordingly." Madden fails to disclose or to suggest this feature. As described above, Madden discloses that the computer sends routing instructions to "switching (or intersection) points" on the conveyor system. Madden, col. 10, ll. 7-13. In other words, the system automatically routes the vehicle along the conveyor. A user does not handle the part based upon a review of the input from the computer as required by the claim. Therefore, the rejection of independent claim 6 was improper. Accordingly, the rejection of claims 7-11 and 16, which depend from

independent claim 6, was also improper. None of the cited references provide a motivation for such a modification.

3. Independent Claim 12 and Dependent Claims 13 and 17-19

Independent claim 12 recites, *inter alia*, a computer "having memory with global work instructions therein," a step of "generating tailored work instructions ... responsive to said part identifier information and said work location information" so that "a user reviews said tailored work instructions and performs said tailored work instructions accordingly." Madden fails to disclose or to suggest these features.

Madden describes that the computer system has a database that "stores data about a particular vehicle that corresponds to conventional build instruction data" and general process data that "includes inventory data, production schedules, tool (including robot) availability, quality results and the like." Madden, col. 15, ll. 39-59. Also, Madden describes that "PLCs enable two way transmission of data, including electronic instructions, to/from the [manufacturing] equipment from/to the host computers." Madden lacks any discussion of whether, or how, tailored work instructions are generated. Furthermore, Madden lacks any discussion that a user reviews those work instructions. Accordingly, the rejection of independent claim 12 was improper. The rejection of claims 13 and 17-19, which depend from independent claim 12, was also improper. None of the cited references provide a motivation for such a modification.

4. Independent Claim 14 and Dependent Claims 20-22

Independent claim 14 recites, *inter alia*, "determining whether said second part disposition requires adjustment to said first part disposition" and "if necessary, modifying said first part disposition." Madden fails to disclose or to suggest either of these features.

As described above, Madden is an assembly line control system that moves vehicles to various lanes within the assembly facility so that contiguous groups of vehicles with the same lot number enter final assembly as a batch. Madden describes that "delayed vehicles are prioritised and an attempt is made to move the vehicle downstream more quickly in an attempt to re-unite the delayed vehicle with other members of its assigned lot." Madden, col. 21, l. 65 to col. 22, l. 1. While Madden prioritizes the delayed vehicle, the disposition of the other vehicle is not modified as required by the claim. Accordingly, the rejection of independent claim 14 was improper. The rejection of claims 20-22, which depend from independent claim 14, was also improper. None of the cited references provide a motivation for such a modification.

5. Independent Claim 23 and Dependent Claims 24, 25 and 27

Independent claim 23 recites, *inter alia*, "determining information about a gas turbine engine part." Madden fails to disclose or to suggest such a feature. Madden relates to "an assembly line control system and, more particularly to an automotive assembly line storage and lot control system." Madden, col. 1, ll. 12-14. Madden neither discloses nor suggests the use of such a system with gas turbine engine parts. Due to the relative low volume of aerospace components, such as gas turbine engine parts, compared to automotive components, no motivation exists for the use of the Madden system. Accordingly, the rejection of independent claim 23 was improper. The rejection of claims 24, 25 and 27, which depend from independent claim 23, was also improper. None of the cited references provide a motivation for such a modification.

6. Independent Claim 34

Claim 34 recites a computer system with "a means for generating a tag to affix to said part," and the tag "having information thereon responsive to said part identifier information." Madden fails to disclose or to suggest such a feature.

As described above, Madden discloses the reading of a label having a vehicle identifier thereon, where the vehicle identifier is "typically the Vehicle Identification Number (VIN)". Madden, col. 7, ll. 30 and 31. In other words, the information on the label described in Madden is part identifier information, not information **responsive to** part identifier information as required by the claim. Accordingly, the rejection of claim 34 was improper. None of the cited references provide a motivation for such a modification.

7. Independent Claim 35

Claim 35 recites a computer system with "a means for generating output responsive to said part identifier information so that a user can review said output and handle said part accordingly." Madden fails to disclose or to suggest such a feature.

As described above, Madden discloses that the computer sends routing instructions to "switching (or intersection) points" on the conveyor system. Madden, col. 10, ll. 7-13. In other words, the system automatically routes the vehicle along the conveyor. A user does not handle the part based upon a review of the input from the computer as required by the claim. Therefore, the rejection of claim 35 was improper. None of the cited references provide a motivation for such a modification.

8. Independent Claim 36

Claim 36 recites a computer system with "means for processing said part identifier information and said work location information to generate tailored work instructions." Madden fails to disclose or to suggest such a feature.

As described above, Madden discloses a computer system with a database that "stores data about a particular vehicle that corresponds to conventional build instruction data" and general process data that "includes inventory data, production schedules, tool (including robot) availability, quality results and the like." Madden, col. 15, ll. 39-59. Also, Madden describes that "PLCs enable two way transmission of data, including electronic instructions, to/from the [manufacturing] equipment from/to the host computers." Madden lacks any discussion of whether, or how, tailored work instructions are generated. Furthermore, Madden lacks any discussion that a user reviews those work instructions. Accordingly, the rejection of claim 36 was improper. None of the cited references provide a motivation for such a modification.

9. Independent Claim 37

Claim 37 recites a computer system with "means for processing said first and second part identifier information to produce first and second part dispositions," where the "second part disposition may require adjustment to the first part disposition." Madden fails to disclose or to suggest such a feature.

As described above, Madden is an assembly line control system that moves vehicles to various lanes within the assembly facility so that contiguous groups of vehicles with the same lot number enter final assembly as a batch. Madden describes that "delayed vehicles are prioritised and an attempt is made to move the vehicle downstream more quickly in an attempt to re-unite the delayed vehicle with

other members of its assigned lot." Madden, col. 21, l. 65 to col. 22, l. 1. While Madden prioritizes the delayed vehicle, the disposition of the other vehicle is not modified as required by the claim. Accordingly, the rejection of claim 37 was improper. None of the cited references provide a motivation for such a modification.

IX. CONCLUSION

In light of the foregoing, Appellants submit that the rejection of claims 1-25, 27 and 34-37 under 35 U.S.C. § 102(e) as being anticipated by Madden was improper. Appellants request that the Board reverse the decision of the Examiner.